

AB067. Cholinergic enhancement of short-term patching in healthy adults

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Background: Patching an eye for a period of 2 hours results in a period of plasticity where inter-ocular balance shifts in favor of the patched eye. Acetylcholine has been shown to improve visual function and augment adult neural plasticity. Here we evaluate whether administering the cholinesterase inhibitor donepezil enhances the magnitude or duration of the patching induced shift in ocular balance.

Methods: We used a double-blind drug treatment design to test the effect of donepezil and patching on the shift in ocular balance. We used a well-known binocular phase combination task to measure ocular balance before and after treatment.

Results: Our results demonstrate that donepezil does not enhance, and may actually reduce the magnitude and duration of the patching-induced shift in ocular balance.

Conclusions: Patching induced adult neural plasticity does not appear to be modulated by the cholinergic system, however, increased dose or longer drug administration periods may yield significant results. Future studies on binocular rivalry are in the pipeline.

Keywords: Plasticity; short-term patching; perceptual learning; pharmacology

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